REMARKS

Claim 21 has been amended to better define the invention and to distinguish it from the art of record. Specifically, the W metal powder is now referred to as being an elemental metal powder as opposed to the oxide, carbide, or other compounded form of the tungsten element. Support for this amendment is abundant throughout the specification. For example, throughout the specification, the metal component, W, is set forth as being a metal powder. Further, the Examiner's attention is drawn to **[0005]** and **[0015]** of the instant specification for further support. It is noted in paragraph **[0015]** that the only compounds present are the silicon nitride component and the MgO. The W is in its elemental form and is not present in a compound form. Further, the Examiner's attention is drawn to paragraph **[0016]** of the specification as further support.

The Examiner is thanked for his removal of the rejection based on Miyanaga et al., U.S. Patent 6,544,917.

All of the claims stand rejected in light of JP '877 in view of U.S. '374.

The JP '877 is not suggestive of making a sputtering target that is useful to sputter a heated layer for an inkjet printer as herein required. Further, this reference does not disclose the blending of tungsten metal powder with silicon nitride, and it does not teach use of MgO as set forth in all of the claims.

The Examiner indicates that in his opinion,

> W is a functional equivalent to Ti in term of sintering Si_3N_4 . . . as evidenced by U.S. '374.
>
> See page 7 of the Office Action.

In this regard, it is initially noted that the '374 patent is not at all suggestive of the use of elemental titanium in the silicon nitride sintered body. The '374 mentions only oxides, carbides, nitrides, silicides, and borides of titanium, zirconium, vanadium, niobium, tantalum, chromium, molybdenum, and tungsten. There is no hint or suggestion in this reference directed toward the provision of elemental tungsten metal particles as now required in the instant claims.

Further, the Examiner's kind attention is drawn to the Declaration of Dr. David B. Smathers Under 37 CFR 1.132 herewith attached. In his Declaration, Dr. Smathers indicates that W and Ti are not functional equivalents in terms of being blended in a sintered body in conjunction with MgO. In this regard, and in specific reference to paragraph **[0005]** of the Smathers Declaration, titanium and tungsten vary greatly in density. Titanium is quite readily blended with the Si_3N_4 due to its density which is similar to that of the Si_3N_4 powder. However, the W powder is much more dense, approximately four times as dense as the titanium. It is much more difficult to blend the tungsten into the Si_3N_4 powder, and accordingly, due to this difficulty, it was necessary to find an effective adjuvant or sintering aid to form a pasty mixture of the W and Si_3N_4 so that the blend could be screened and then loaded into a vacuum hot press or the like to make the requisite targets.

Accordingly, Dr. Smathers indicates that the properties of the elemental W powder and Ti powder are vastly different with regard to their capability of being blended with Si_3N_4 powder and that these two elements would not be viewed as being functional equivalents in this capacity. The first incomplete paragraph on page 8 of the Office Action indicates that this information had not been made of record, and now, due to the submission of the Declaration of Dr. Smathers, this requirement has been satisfied.

Further, the Office Action also equates MgO with Al_2O_3 and Y_2O_3 in terms of sintering Si_3N_4. (See Office Action, page 4, lines 1-5). However, MgO is more hygroscopic than Al_2O_3 and Y_2O_3. The hygroscopicity allows the highly dense W particles to form a stable blend with the Si_3N_4. Again, attention is directed to the enclosed Declaration wherein Dr. Smathers points out that this increased hygroscopicity results in the formation of a pasty agglomeration of the light Si_3N_4 with the heavier W particles. This agglomeration is then screened to result in the desired particle size followed by pressure consolidation into a near net shape for target use. The use of the MgO allows the other components (W metal and Si_3N_4) to stay mixed while its presence, in small quantities, does not adversely affect the desired properties of the films formed during sputtering. Accordingly, as indicated by Dr. Smathers in paragraphs **[0008]** and **[0009]** of his Declaration,

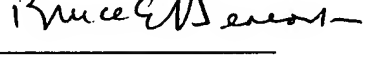
MgO and Al_2O_3 or Y_2O_3 are not functionally equivalent with regard to their capability of mixing with and binding a W and Si_3N_4 mixture.

For all of the above reasons, it is respectfully submitted that all of the claims in the application define patentable subject matter. The prompt issuance of a Notice of Allowance is solicited.

The Examiner is invited to contact the undersigned attorney if, during the course of reconsideration of this application, any question or comment should arise.

Respectfully submitted,

WEGMAN, HESSLER & VANDERBURG

By 

Bruce E. Peacock
Reg. No. 28,457

Suite 200
6055 Rockside Woods Boulevard
Cleveland, Ohio 44131
216.642.3342

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